

18 APR 2005

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International publication date  
29 April 2004 (29.04.2004)

PCT

(10) International publication number  
WO 2004/035561 A1

(51) International patent classification<sup>7</sup>:  
C07D 307/86, 307/94, 405/12, 213/48, C07C  
47/548, 47/55, A61K 31/343, A61P 25/18

228 Fleetwood Drive, San Antonio, TX 78232 (US).  
COLPAERT, Francis [BE/FR]; Domaine de Mirabel,  
F-81700 Puylaurens (FR).

(21) International application number:  
PCT/FR2003/003053

(74) Representatives: MARTIN, Jean-Jacques, etc.;  
Cabinet Regimbeau, 20, rue de Chazelles,  
F-75847 Paris Cedex 17 (FR).

(22) International filing date: 16 October 2003 (16.10.2003)

(25) Language of filing: French

(81) Designated states (national): AU, BR, CA, CN, JP,  
MX, US, ZA.

(26) Language of publication: French

(84) Designated states (regional): European Patent (AT,  
BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB,  
GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,  
TR).

(30) Data relating to the priority:  
02/12,854 16 October 2002 (16.10.2002) FR

(71) Applicant (for all designated States except US): PIERRE  
FABRE MEDICAMENT [FR/FR]; 45, place Abel-Gance,  
F-92100 Boulogne-Billancourt (FR).

Declaration under Rule 4.17:  
- Of inventorship (Rule 4.17(iv)) for the following  
designation US.

(72) Inventors; and

(75) Inventors/Applicants (US only): VACHER, Bernard  
[FR/FR]; 5, rue des Cigales, F-81100 Castres (FR). CUISIAT,  
Stéphane [FR/FR]; 13, rue du Pasteur Henri Bosc, Lotissement  
les Carlines, F-81100 Castres (FR). KOEK, Wouter [NL/US];

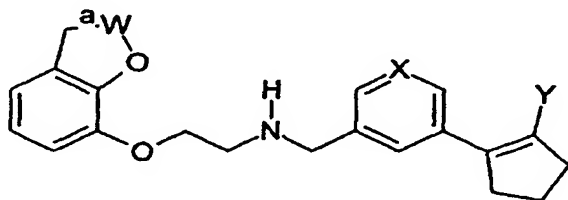
Published:  
- With International Search Report.

[continued on next page]

As printed

(54) Title: 3-(CYCLOPENTEN-1-YL)-BENZYL- OR 3-(CYCLOPENTEN-1-YL)-HETEROARYLMETHYL-AMINE DERIVATIVES AND USE THEREOF AS MEDICINES FOR TREATING SCHIZOPHRENIA

(54) Titre : DERIVES DE 3-(CYCLOPENTEN-1-YL)-BENZYL- OU 3-(CYCLOPENTEN-1-YL)-HETEROARYLMETHYL-AMINES ET LEUR UTILISATION A TITRE DE MEDICAMENTS POUR LE TRAITEMENT DE LA SCHIZOPHRENIE



(1)

(57) Abstract: The invention concerns compounds of general formula (I), wherein: (a) represents a single bond or a double bond; W represents a CH, CH<sub>2</sub>, CHCH<sub>3</sub>, CCH<sub>3</sub>, C(CH<sub>3</sub>)<sub>2</sub> group, a C(CH<sub>2</sub>)<sub>2</sub> group (i.e., a carbon atom bearing two methylene groups bound together to form a spiro-cyclopropane unit) or a C(CH<sub>2</sub>)<sub>3</sub> group (i.e., a carbon atom bearing two methylene groups bound together to form a spiro-cyclobutane unit) provided that when (a) is a double bond, then W exclusively represents a CH<sub>2</sub>, CHCH<sub>3</sub>, C(CH<sub>3</sub>)<sub>2</sub>, C(CH<sub>2</sub>)<sub>2</sub> or C(CH<sub>2</sub>)<sub>3</sub> group; X is a carbon atom bearing a hydrogen atom (CH) or a nitrogen atom; Y is a carbon atom bearing a hydrogen atom or a fluorine atom, their additive salts and optionally the hydrates of additive salts with pharmaceutically acceptable mineral acids or organic acids as well as their tautomeric forms, pure enantiomers and enantiomer mixtures whether racemic or not.

WO 2004/035561 A1

then W exclusively represents a CH or CCH<sub>3</sub> group and when (a) is a single bond, then W exclusively represents a CH<sub>2</sub>, CHCH<sub>3</sub>, C(CH<sub>3</sub>)<sub>2</sub>, C(CH<sub>2</sub>)<sub>2</sub> or C(CH<sub>2</sub>)<sub>3</sub> group; X is a carbon atom bearing a hydrogen atom (CH) or a nitrogen atom; Y is a carbon atom bearing a hydrogen atom or a fluorine atom, their additive salts and optionally the hydrates of additive salts with pharmaceutically acceptable mineral acids or organic acids as well as their tautomeric forms, pure enantiomers and enantiomer mixtures whether racemic or not.

(57) Abrégé : L'invention concerne des composés de formule générale (1) dans laquelle : (a) représente une liaison simple ou une liaison double; W représente un groupe CH, CH<sub>2</sub>, CHCH<sub>3</sub>, CCH<sub>3</sub>, C(CH<sub>3</sub>)<sub>2</sub>, un groupe C(CH<sub>2</sub>)<sub>2</sub> (i.e., un atome de carbone portant deux groupes méthylènes liés entre eux de manière à former un motif spiro-cyclopropane) ou C(CH<sub>2</sub>)<sub>3</sub> (i.e., un atome de carbone portant deux groupes méthylènes liés à un autre groupe méthylène de manière à former un motif spiro-cyclobutane) avec la réserve, toutefois, que lorsque (a) est une liaison double alors W représente exclusivement un groupe CH ou CCH<sub>3</sub> et que, lorsque (a) est une liaison simple, alors W représente exclusivement un groupe CH<sub>2</sub>, CHCH<sub>3</sub>, C(CH<sub>3</sub>)<sub>2</sub>, C(CH<sub>2</sub>)<sub>2</sub> ou C(CH<sub>2</sub>)<sub>3</sub>; X est un atome de carbone portant un atome d'hydrogène (CH) ou un atome d'azote; Y est un atome d'hydrogène ou un atome de fluor; leurs sels d'addition et éventuellement les hydrates des sels d'addition avec les acides minéraux ou les acides organiques pharmaceutiquement acceptables ainsi que leurs formes tautomères, les énantiomères purs et les mélanges d'énantiomères racémique ou non.

- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For an explanation of the two-letter codes and the other abbreviations, reference is made to the explanations ("Guidance Notes on Codes and Abbreviations") at the beginning of each regular edition of the PCT Gazette.

## INTERNATIONAL SEARCH REPORT

International Application No

PCT 03/03053

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07D307/86 C07D307/94 C07D405/12 C07D213/48 C07C47/548  
 C07C47/55 A61K31/343 A61P25/18

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07D C07C A61K A61P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, CHEM ABS Data, BEILSTEIN Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 99 58527 A (EGYT GYOGYSZERVEGYESZETI GYAR ;IVANICSNE MEGYERI KATALIN (HU); MIK) 18 November 1999 (1999-11-18) claims	1-6
A	WO 00 58282 A (KOEK WOUTER ;PF MEDICAMENT (FR); VACHER BERNARD (FR); CUISIAT STEP) 5 October 2000 (2000-10-05) cited in the application claims	1-6
A	WO 99 51575 A (AMERICAN HOME PROD) 14 October 1999 (1999-10-14) cited in the application claims	1-6
	-/--	

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents :

\*A\* document defining the general state of the art which is not considered to be of particular relevance

\*E\* earlier document but published on or after the international filing date

\*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

\*O\* document referring to an oral disclosure, use, exhibition or other means

\*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*Z\* document member of the same patent family

Date of the actual completion of the international search

11 March 2004

Date of mailing of the international search report

25/03/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
 NL - 2280 HV Rijswijk  
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
 Fax: (+31-70) 340-3016

Authorized officer

Chouly, J

## INTERNATIONAL SEARCH REPORT

International Application No

PCT 03/03053

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>CHEMICAL ABSTRACTS, vol. 119, no. 17, 25 October 1993 (1993-10-25) Columbus, Ohio, US; abstract no. 180657, YANUSAGA T. ET AL: "Preparation of (hetero)aryloxyalkylamine derivatives having selective affinity to serotonin (5-HT 1A)receptors" XP002245145 abstract &amp; JP 05 125024 A (YAMANOUCHI PHARMA CO LTD) 21 May 1993 (1993-05-21) cited in the application</p>	1-6

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/JP03/03053

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9958527	A	18-11-1999	HU 9801085 A2	28-08-2000
			HU 9801086 A2	28-08-2000
			AU 753706 B2	24-10-2002
			AU 4052999 A	29-11-1999
			CA 2332275 A1	18-11-1999
			EP 1077973 A2	28-02-2001
			HR 20000750 A1	30-06-2001
			WO 9958527 A2	18-11-1999
			JP 2002514643 T	21-05-2002
			PL 345309 A1	03-12-2001
			SK 17212000 A3	10-05-2001
WO 0058282	A	05-10-2000	FR 2791676 A1	06-10-2000
			AT 227714 T	15-11-2002
			AU 3661400 A	16-10-2000
			CA 2366820 A1	05-10-2000
			DE 60000790 D1	19-12-2002
			DE 60000790 T2	02-10-2003
			DK 1187824 T3	10-03-2003
			EP 1187824 A2	20-03-2002
			ES 2186639 T3	16-05-2003
			WO 0058282 A2	05-10-2000
			PT 1187824 T	31-03-2003
			US 6417222 B1	09-07-2002
WO 9951575	A	14-10-1999	AU 3386199 A	25-10-1999
			CA 2327359 A1	14-10-1999
			CN 1304403 T	18-07-2001
			EP 1070050 A1	24-01-2001
			JP 2002510675 T	09-04-2002
			WO 9951575 A1	14-10-1999
JP 05125024	A	21-05-1993	NONE	